

CHAPTER 2 Existing and Future Conditions

How is Alameda County's transportation system working now and what quality of service can we expect in the future with the money available to us? A key component of any long-term transportation plan is to determine whether planned improvements will be adequate to maintain our quality of transportation service given continued population and employment growth. Only with additional funding and continued management will we keep congestion from degrading the performance of the system and meet the standards of a modern system¹.

EXISTING CONDITIONS

Overall Transportation System

Alameda County extends from the region's urban core to its rural periphery, incorporating land uses that range from intensely urban to suburban and rural. The diversity in geography and in patterns of development leads to a variety of transportation needs within each community. Reflecting this diversity, Alameda County residents have a variety of modes and routes from which to choose.

Today, factors such as the cost of housing, quality of schools and community identity have more influence on where people live than does the transportation system. However, Alameda County residents consider transportation to be the third most pressing issue—after education and employment—according to a 2003 survey conducted by the CMA.

Portions of Alameda County's roadway and transit network have been included in the Metropolitan Transportation Commission's (MTC) Metropolitan Transportation System (MTS). Those streets and roads, highways, mass transit routes, bikeways, transfer points, airports and seaports are considered essential for regional mobility. An expanded description of the MTS is presented in Appendix B.

¹ Standards provide a benchmark for measuring performance of the roadway and transit systems. Roadway congestion standards are established by LOS which are an indication of time lost in traffic congestion. LOS has six gradations of LOS, ranging from A to F. An LOS A designation represents free flow, or unimpeded travel at the posted speed limit. A LOS F designation represents very congested, bumper-to-bumper conditions. Congested locations are defined as those operating at LOS E or F.

Transit service standards established in the *Congestion Management Program* include frequency of service, routing, load factors and coordination of service with other transit operators.

Roadways

Alameda County has an extensive network of interstate freeways, state highways and principal arterials that serve as primary trunklines and key connectors to adjacent counties. Several major transportation improvements were implemented on Alameda County's roadway network since the last update of the Plan. These include:

- Interim I-680 HOV lane;
- Part of the I-580/I-680 interchange ramps;
- San Pablo Avenue/State Route (SR) 123 Smart Corridor (multi-modal program to increase efficiency and safety of transportation corridor); and
- I-880 Smart Corridor.

Also, funding is available to:

- Widen I-238 to allow construction of additional through lanes;
- Complete the southbound HOV lane on I-680, from Milpitas to SR-84;
- Construct a northbound HOV lane on I-680, from Milpitas to SR-84;
- Construct a eastbound and westbound HOV lane on I-580, from I-680 to Greenville Road;
- Construct a southbound Smart Lane (HOT) lane on I-680 and install ramp metering; and
- Widen the I-880/SR-262 interchange.

Transit Service

Alameda County is well-served by a variety of transit modes including intercity rail, BART rail, express bus, local bus, and ferry. An expanded description of each major transit operation is presented in Appendix C.

TRAVEL PATTERNS

Information on travel behavior that is discussed in this chapter, including how people get to work and how long it takes them to get there, is based on data from the 2000 Census. Significant demographic changes have occurred since 1990 that have had a major impact on travel behavior in Alameda County and the Bay Area in the last decade. Among the most significant are:

- Real increase (relative to inflation) in average household income;
- Growth in vehicle ownership;
- Increased average household size;
- The relatively fast growth in suburb-to-suburb commutes and relatively slow growth in the central city commute; and
- A decline in federal transit operating subsidies available to Bay Area transit operators.

Although the cost of gasoline has increased dramatically in the past decade, the other factors listed above have resulted in an increasing reliance on the single-occupant automobile. These trends have continued in the current decade and are expected to continue in future decades.

The Historical Commute

The percentage of residents who both live and work in Alameda County has dropped steadily. In 1960, more than 87 percent of Alameda County residents worked in Alameda County. By 2000, 67 percent of residents worked locally, resulting in an increased number of long-distance commuters in Alameda County. The present transportation system allows people to make independent decisions about where to live and work.

Since a majority of the residents still work within the county, the primary transportation problem is how to move Alameda County residents around the county, followed by work travel to Santa Clara and San Francisco Counties (each of which accounts for 10 percent of Alameda's residents commuting out of the County).

Choice of Commute Mode

Based on the 2000 Census, 66 percent of all Alameda County commuters drove alone. While this is less than in all other Bay Area counties except San Francisco and Marin, the share of Alameda County commuters driving alone has remained stable in the past decade. The percentage of Alameda County residents who drove alone to all counties increased slightly (three percent) between 1990 and 2000, while the percentage of Alameda County residents who also work in the county declined slightly (four percent) during this same period.

Drive Alone

Although not comparable to the census data, RIDES for Bay Area Commuters, Inc., has conducted annual surveys of Alameda County residents since 1993. The RIDES survey showed drive alone rates in Alameda County fluctuated from 62 percent in 1993 to 69 percent in 2001 and 2002 and 64 percent in 2003. These fluctuations appear to reflect the changes in the economy during this time.

Transit

A high level of transit use would be expected given the broad extent of transit service provided in Alameda County. While the number of workers using transit increased from 63,000 workers in 1990 to 72,174 in 2000, the overall share of workers using transit remained roughly the same during this time, at approximately 10 percent of the workforce. These results suggest that transit use in Alameda County and the Bay Area has remained stable over the past decade. However, the RIDES survey showed transit rates fluctuated in Alameda County over the past decade, with 17 percent in 1993, 13 percent in 1994 and 1996, 18 percent in 1999, nearly 20 percent in 2000 and dropping again to 15 percent in 2003. As with driving alone, the fluctuations may reflect changes in the economy during this time.

Ridesharing

Similar trends are observed in ridesharing. Between 1990 and 2000, while the share of commuters who drove alone in Alameda County remained stable at 66 percent, the percentage of those sharing rides (carpools) slightly increased from 12.8 percent (80,773 commuters) in 1990 to 13.8 percent (93,652 commuters) in 2000. This trend suggests a small decrease in reliance on the single-occupant automobile. The RIDES survey noted fluctuations in ridesharing over the past decade, ending with an increase by 2003. RIDES noted that 14 to 16 percent of commuters used carpool, casual carpool or vanpool as a mode of transportation between 1993 and 2000. This rideshare rose to 20 percent in 2003.

Vehicle Ownership

Between 1990 and 2000, the number of people who did not own a vehicle declined again. This is part of a steady trend since 1960 of more Alameda County residents owning vehicles. During the past decade, the number of people with two vehicles increased slightly and those with one and three vehicles remained steady.

Vehicle Occupancy

Regionwide, the average vehicle occupancy slightly increased from 1.097 in 1990 to 1.106 in 2000. The average vehicle occupancy for workers residing in Alameda County was slightly higher than the Bay Area's vehicle occupancy rate in 2000. With the shift to more people per vehicle in 2000, these figures indicate a slight decrease in reliance on the single-occupant automobile for commute trips.

Bicycle

In 2000, Alameda County accounted for 23 percent of all bicycle commuters in the Bay Area, yet only accounted for 21 percent of the region's population. Only Santa Clara County exceeded this figure with 28 percent of the region's bicyclists, which accounted for 24 percent of the region's population.

Working at Home/Telecommuting

In 2000, Alameda County ranked second in the Bay Area to Santa Clara County in the number of people working from home. Telecommuting and a national network of computers and communications technology offers potential to reduce transportation demand. The share of Alameda County residents who worked at home increased from 1.7 percent in 1980 to 3.9 percent in 1990 (updated information will be available from the 2000 Census).

PERFORMANCE OF THE SYSTEM

The *2002-2003 Performance Report* shows that most of the CMP highway system in Alameda County operated at an acceptable level of service (LOS D or better). During the p.m. peak hour in 2002, 20 percent of freeway mileage and 9.1 percent of arterial mileage in Alameda County operated at LOS E or F. This is a decrease from 1994 conditions when 26.4 percent of the freeways and 12 percent of arterials operated at LOS E or F. Between 1990 and 2000, average commute times for employed workers residing in Alameda County increased almost 20 percent, from 25.7 minutes to 30.8 minutes.

Although not directly comparable, the *RIDES Commute Profile 2003* lists the average commute travel time in 2000 in Alameda County at 33 minutes. Drive-alone commute times for Alameda County workers increased from 21.4 to 23.6 minutes. Average rideshare commute times increased from 27.8 to 28.2 minutes. During this same period, the average commute distance in the Bay Region increased by one mile, from 11.0 to 12.0. During this same period, the average commute distance in the Bay Region decreased by one mile from 17 to 16 miles.²

Congestion

Caltrans annually surveys the freeway system to determine the severity of congestion (shown in Figure 2.1). Some key findings include:

- The most congested location in Alameda County and the Bay Region is westbound I-80, from Willow Avenue to the Bay Bridge, during the a.m. peak.

² Source: Rides for Bay Area Commuters, Inc., *Commute Profile*, October 2003.

EXISTING AND FUTURE CONDITIONS

- The second most congested location in Alameda County is southbound I-880, from Thornton to Mowry/Stevenson to Dixon Landing Road, during the a.m. peak.
- Eastbound I-580 in the p.m. peak, from Hopyard to El Charro, moved up from fifth to third in Alameda County and the Bay Area.

Of the top ten congested locations in the Bay Area in 2002, six are in Alameda County. In addition to the three mentioned above, others include:

- Southbound SR-84, from Newark to the Dumbarton Toll Plaza, during the a.m. peak;
- Westbound I-580, between Vasco Road and Airway, during the a.m. peak; and
- Southbound I-680, between Sunol to SR-262, during the a.m. peak.

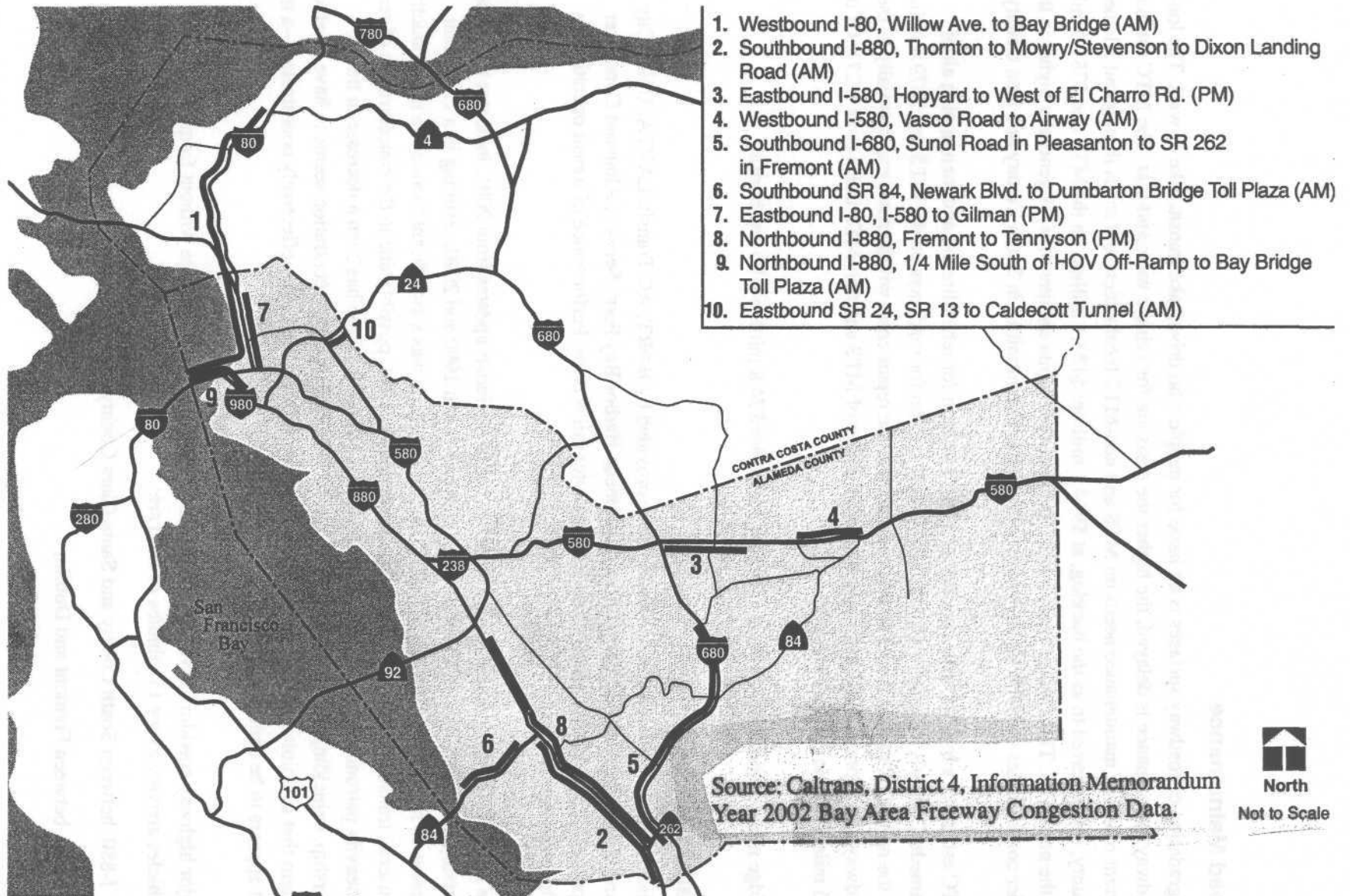
Of the top ten congested corridors in Alameda County only six are in the South and East County areas. Eastbound State Routes 24 and 13, to the tunnel, were added to the Top 10. These changes from previous years reflect the dramatic increase in jobs in southern Alameda County and Santa Clara County coupled with a shortage of new housing.

Typically congested arterial segments include:

- Ashby Avenue (SR-13), from College Avenue to Domingo;
- Portions of San Pablo Avenue, Shattuck Avenue and Adeline in Berkeley;
- Hesperian Boulevard in San Leandro and the unincorporated area of the county;
- Decoto Road, from Union Square to Alvarado Niles in Union City;
- Eastbound SR-84, from Pleasanton/Sunol Road to Vallecito Nuclear Center;
- SR-84/Fremont Boulevard, from Peralta to Thornton; and
- Mowry Avenue through Fremont.

For many Alameda County residents, traffic issues are particularly acute on local neighborhood streets. Local streets in many communities have experienced increased traffic volumes, some of which is created by drivers diverting from congested freeways and arterials.

Figure 2.1—Top 10 Congestion Locations in Alameda County (2002)



Road Maintenance

Degradation of roadway surfaces is an issue for people who drive, take transit, bike or walk. The longer roadway maintenance is delayed, the higher the costs are for vehicle wear-and-tear. The MTC estimates current roadway maintenance needs on MTS and non-MTS local streets and roads throughout Alameda County, also referred to as the backlog, at \$914.1 million: \$133.1 million on the MTS and \$781.0 million on the non-MTS. The average maintenance backlog (per capita and per mile) is generally higher in the older communities in North County than in the newer communities in South County and East County.

MTC estimates a total 25-year shortfall of \$791.8 million for rehabilitating and maintaining all of Alameda County's local streets and roads: \$112.4 million for roadways on the MTS and \$679.4 million for the non-MTS routes. If maintenance is deferred, the repair costs will increase exponentially as the roadways deteriorate. MTC estimates the total number of MTS and non-MTS miles to be 3,271. Of these, 306 miles, or nine percent, are on the MTS.

Bridge maintenance needs over the 25-year period are \$74.8 million with no shortfall.

Transit Service

Existing bus, rail and ferry transit services are provided by BART, AC Transit, LAVTA, Union City Transit, Alameda-Oakland Ferry Service, Alameda Harbor Bay Ferry Service, Altamont Commuter Express (ACE) and the Capitol Corridor commuter rail service. Performance of transit operations is included in Appendix D.

The *2003-2003 Performance Report*, which is based on transit updates from 2001, indicates that transit ridership gradually increased in Alameda County between 1990 and 2000, resulting in a 12 percent increase in ridership during this period. Concurrently, there was a significant increase in the productivity of arterial transit service (i.e. bus service) from 1990 to 1994, possibly due to the concentration of service on heavily patronized routes. However, in the past two years, there has been a decrease in transit ridership, coinciding with the downturn in the economy. Service concentration seems to have created a system that is simultaneously more responsive, more efficient and more effectively coordinated—a trend that appears to be continuing.

Major highway corridors have frequent trunkline service. However, those without frequent service (vehicles arriving every 15 minutes or less) are:

- I-880, between South County and Santa Clara County;
- I-680, between Fremont and Dublin;

- I-680, between Dublin and Contra Costa County;
- I-580, between San Joaquin County and Dublin/Pleasanton;
- SR-92 (San Mateo Bridge); and
- SR-84 (Dumbarton Bridge).

Safety and Security

Roadways

Roadway safety statistics are compiled by: Caltrans for Interstate and State Highways; Alameda County Public Works Agency for county roads; and individual cities for roadway segments within incorporated areas. Caltrans also compiles “expected” accident rates for all non-city streets by comparing statewide accident statistics for similar types of roadways. Although the number of accidents per million vehicle miles of travel dropped on eight of the 10 freeways located in Alameda County between 2000 and 2002, rates rose on SR-24 and I-980. The accident rate in Alameda County is higher than the statewide average for similar facility types. Summaries of highway safety trends are presented in Appendix E.

BART

Passenger security and the perception of high-crime activity in the vicinity of transit stations and bus stops represents a barrier to encouraging transit use. Crime statistics compiled by BART police indicate that the number of Part I and Part II crimes³ decreased by 16 percent from 2001 to 2002, and by 12 percent compared to 2003⁴. Figures show an increase of five percent in Part I and Part II crimes from 2002 to 2003. At any given time, there are typically 30 BART police officers on-duty throughout the system. They are responsible for monitoring 43 stations with over 47,000 parking spaces. BART police believe that crime at BART stations reflects general crime levels for the surrounding communities; that BART itself does not bring criminals into the area. The number of crimes committed in 2003 at Alameda County BART stations is presented in Appendix F.

AC Transit

The Alameda County and Contra Costa Sheriff's Departments assumed security responsibilities for AC Transit in 1990. By 1992, the number of crimes dropped significantly from the late 1980's. Since 1993 the number of service calls received and responded to decreased by 22 percent, the number of crimes

³ These crimes consist generally of criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny theft, motor vehicle theft, arson, fare evasion, battery and vandalism.

⁴ Officer Matthew Cromer, BART Police Operations Division, June 23, 2004.

reported decreased by 56 percent and the number of Part I crimes⁵ decreased by 20 percent. The number of Part I crimes on AC Transit have fluctuated since 1993, peaking in 1994 at 186 and decreasing to 73 in 2000. The number of crimes committed between 2000 and 2004 is presented in Appendix G.

Mobility for the Disabled

The federal Americans with Disabilities Act (ADA) of 1990 mandated extensive changes to improve accessibility for persons with disabilities. Local agencies must ensure that roadway improvement projects are constructed (or reconstructed) with handicap-ramp access added to sidewalks at all intersections and crosswalks. Transit agencies must provide: paratransit services comparable to fixed-route service; communications systems as effective as those for non-disabled persons; special transit operator training; and improved lift and securement equipment on new, leased or modified buses.

Currently, all AC Transit, LAVTA and Union City Transit buses are lift-equipped and all bus lines are 100 percent accessible. New bus purchases meet all ADA requirements and new bus stop signs have been developed. The East Bay Paratransit consortium provides door-to-door shared ride service for passengers who meet eligibility requirements and make advanced reservations. Formed in 1994, the consortium consists of representatives from BART and AC Transit. The consortium provides service to the LAVTA and Union City Transit service areas as well.

Freight Movement

In 2004, truck travel accounted for almost six percent of the total vehicle miles traveled (VMT) on Alameda County highways, compared to an average of nearly five percent for large truck (not pickups and panel trucks) traffic in the region. Truck movements rely on Critical Freight Routes along I-80, I-880, I-580 east of I-238 and I-238. Although trucks use the roadway system at all hours, the peak period for truck travel in Alameda County is midday, with many truckers choosing to avoid the morning and afternoon commute peaks. Truck routes listed above are most affected by midday congestion.

Freight movement in Alameda County is focused largely around two major hubs: the Port of Oakland and the Oakland International Airport. Truck traffic generated by the Port of Oakland represents approximately two percent of all truck travel in the region. The Port is working with its transportation partners to expand the capacity of its intermodal rail terminals and to improve track access connecting the Port with the national rail system. Additionally, the Port is working to divert containers moving between the Port and the Central Valley from truck to rail via a new short-haul service. One of the primary issues in providing additional rail service will be funding ongoing operating costs.

⁵ Part I crimes include criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny theft, motor vehicle theft and arson.

Key rail freight corridors are: Union Pacific (UP) line between the Port of Oakland and the City of Richmond (with trains operated by UP and BN-Santa Fe); one UP Pacific line between the Port of Oakland and Santa Clara County; and the UP line between the Port of Oakland and San Joaquin County via Niles Canyon. The UP and BNSF intermodal yards are located within the Port, providing transcontinental rail service from the Port.

Oakland International Airport is another major hub for freight movement in Alameda County. Key access roadways serving the airport are I-880, Hegenberger Road, 98th Avenue and Doolittle Drive (SR-61).

Performance Summary

Annually, the CMA prepares a *State of Transportation in Alameda County, Performance Report*. The purpose of the report is to provide information on how the transportation system is functioning in the county. It also identifies transportation improvements to be considered in developing the Capital Improvement Program (CIP) for the CMP and updating the *Countywide Transportation Plan*. In general, the following conditions were observed in 2002 (see Table 2.1).

- Overall, level of service on freeways improved between 2000 and 2002. There were higher percentages of roads with LOS B-D and lower percentages of roads with LOS E or F. Overall level of service for arterials remained similar to previous years.
- Overall average speed for freeways and arterials stayed the same between 2000 and 2002. One roadway segment was identified as LOS F: the stretch between the I-580/I-680 interchange and SR-84, in Livermore.
- Although overall speed and LOS remained the same or improved on freeways, LOS on some individual segments dropped: I-680 east of the interchange; I-880 from Hegenberger to High Street in Oakland; and I-880 from Tennyson to Alvarado-Niles in South County.
- Vehicle hours of delay (congestion) decreased from 2001 to 2002 by 6.6 percent. This was the first decrease since 1997, reflecting the economic downturn. Caltrans reports the total delay in 2002 was 61,300 vehicle hours as compared to 65,600 in 2001.
- The westbound and southbound I-80 corridors were listed as the first and second most congested corridors in Alameda County and the Bay Area.
- Eastbound I-580 ranked as the third most congested freeway in Alameda County and the Bay Area.
- Out of the ten most congested locations in the Bay Area in 2002, six are in Alameda County (specific locations were noted above).

EXISTING AND FUTURE CONDITIONS

- For the first time, eastbound SR-24 at the Caldecott Tunnel in the a.m. peak period and eastbound I-80 between I-580 and Gilman in the p.m. made the Top 10 congested corridors, ranking 10th and 7th in Alameda County, respectively.
- The three worst congested freeways during the a.m. peak period were: westbound I-80, from Willow Avenue to the Bay Bridge; southbound I-880, from Thornton to Mowry/Stevenson to Dixon Landing Road; and westbound I-580 Vasco to Airway.
- The three worst congested freeways during the p.m. peak period were: eastbound I-580, Hopyard to West of El Charro Road; eastbound I-80, I-580 to Gilman; and northbound I-880, Fremont to Tennyson
- Travel time for bicycle trips in the northern part of the county continued to compete well with both automobile and transit trips.
- In 2002, the percent of roads reported to be in good condition was 70 percent. This appears to be an increase of about seven percent from 2001 (although MTC modified the Pavement Condition Index, which is the standard for road condition, so it is not directly comparable).
- The number of bus routes with 30-minute or less headways increased in the p.m. peak compared to the previous year.

Table 2.1—Summary of Applied Performance Measures

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2002 RESULTS	OBSERVATION
HIGHWAYS			
Level of Service (based on 2002 monitoring)	<ul style="list-style-type: none"> • Mobility • Air Quality 	<p>Freeways: LOS A dropped about 5 percent; B doubled; C and D increased; E decreased; and F remained the same.</p> <p>Arterials: LOS A dropped; B almost doubled; C, D and F dropped; and E remained the same.</p>	The percent of segments with LOS A dropped for both arterials and freeways. Similarly, the number of LOS B segments doubled. The change in percentage in the remaining categories varied.
Average Speed	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	<p>Freeways: 51.2 mph for the afternoon peak</p> <p>Freeways: 42.0 for the morning peak</p> <p>Arterials: 23.3 mph for the afternoon peak</p>	<p>Average speed during the evening peak on arterials remained unchanged.</p> <p>The average freeway speed for the morning peak increased 4 miles per hour</p>
Travel Time	<ul style="list-style-type: none"> • Mobility • Air Quality • Land Use 	<p>Travel times for 5 origin-destination pairs continued to show auto significantly faster than transit.</p> <p>Bicycle trips in the northern part of the county continue to compete well with both auto and transit trips.</p>	<p>In general, transit trips took more than twice as long as trips by auto.</p> <p>(Note: Some of the increase in trip time may be due to a change in method of collecting data.)</p>

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2002 RESULTS	OBSERVATION
Duration of Congestion (freeways only)	<ul style="list-style-type: none"> Economic Air Quality 	<p>Daily VHD decreased by 4,300 hours or 6.6 percent.</p> <p>I-80 continues to be the most congested corridor in the Bay Area, with congestion increasing 300 hours.</p> <p>I-880 SB near the County line remained the number 2 spot followed by I-580 as number 3. I-680 moved from 3rd to 5th.</p>	<p>This was the first decrease in VHD since the CMA began monitoring the transportation system.</p> <p>Alameda County experienced twice as much delay as Santa Clara County and three times more than Contra Costa County. The Top 4 congested corridors in the County account for two-thirds percent of total delay.</p> <p>Not all corridors realized a decline in delay; the eastern and southern parts of the County had increases.</p> <p>The I-580 corridor now accounts for 25 percent of the total congestion in the Top Ten compared to 28 percent for the I-880 and I-680 corridors combined and 22 percent for I-80.</p>
Maintenance (Local)	<ul style="list-style-type: none"> Economic 	<p>Pavement Condition:</p> <p>Good, 70.4%</p> <p>Fair, 12.8%</p> <p>Poor, 11.6%</p> <p>Very Poor, 5.2%</p>	<p>Percentage of roads reported to be very poor decreased about 4 percent since 2000.</p> <p>Other results are not directly comparable because of modifications made by MTC to the PCI ranges.</p>
Accident Rate	<ul style="list-style-type: none"> Mobility Air Quality Economic 	<p>Of the 10 freeways located in Alameda County, 8 had lower accident rates in 2002</p>	<p>Accidents on the most congested corridors decreased since 2000. The rate of accidents on I-980 and SR-24 increased.</p>
TRANSIT Ridership	<ul style="list-style-type: none"> Economic Air Quality Land Use 	<p>2000 Census indicates 10.6 percent of Alameda Co. commuters use transit in comparison to 9.7 percent in Bay Region.</p>	<p>The ridership data for transit has increased steadily since 1994.</p>

PERFORMANCE MEASURE	OBJECTIVE OF CMP	2002 RESULTS	OBSERVATION
Coordination of Services	<ul style="list-style-type: none"> · Mobility · Air Quality 	Transfer facilities are located at BART, AMTRAK, ACE, Dublin and Livermore Transit Centers, Greyhound and ferry terminals	Greatest number of transfer opportunities is found at the BART stations.
Vehicle Maintenance	<ul style="list-style-type: none"> · Air Quality 	<p>Bus Service: Miles between mechanical road calls increased for LAVTA and decreased for AC Transit since 2001, but are both well above the national average.</p> <p>Rail: Mean time between service delays improved for BART and decreased for ACE since 2001.</p>	
Routing	<ul style="list-style-type: none"> · Mobility · Air Quality · Land Use 	Surface miles covered by transit increased 21% between 1994 and 2002. However, there was 5% decrease during the last fiscal year.	Surface miles increased by 28% for the amount of service and 16% for patronage for the same period.. These numbers also decreased slightly in the last fiscal year
Frequency	<ul style="list-style-type: none"> · Mobility · Air Quality · Land Use 	<p>During peak period, 93 percent of bus routes have 40-minute headways or less; 30% arrive every 15 minutes.</p> <p>BART headways vary 2.5 to 15 minutes during peak.</p>	Mid-day headways 30 minutes or less increased by 7 routes. Evening headways 30 minutes or less increased 8 routes.
BICYCLE Completion of Countywide Bike Plan	<ul style="list-style-type: none"> · Mobility · Air Quality 	<p>Countywide Bicycle Plan proposes approximately 490 miles of countywide facilities, with about 158 miles existing.</p> <p>About 18 miles of new facilities were constructed in the past year.</p> <p>The network is about 360 percent complete.</p>	<p>Completion of Citywide Plans: There are about 405 miles of completed bicycle facilities on the citywide bicycle networks and 624 miles of unconstructed, planned facilities.</p> <p>The citywide system is about 65 percent complete.</p>

FUTURE TRANSPORTATION CONDITIONS

Demographic Projections

Conditions on Alameda County's transportation system are estimated for the year 2025 based on demographic projections set forth in the Association of Bay Area Government's (ABAG) *Projections 2002* and the MTC regional and the Alameda County transportation models. The 2025 projections are included to show future roadway conditions with various future transportation improvement scenarios.

The population of Alameda County is projected to be 1,534,400 in 2005. That number is expected to increase 24.7 percent, to 1,914,200, by the year 2025. Similarly, the number of employed residents is expected to increase by 223,790 people, or 28 percent, during this same time period. Detailed numbers by planning area can be found in Appendix H.

Transportation Improvement Scenarios

Two transportation improvement scenarios were developed to determine which scenario would yield improved conditions for the year 2025:

- Scenario One is a baseline scenario, which includes projects for which funding is committed or construction of the project is expected by 2010. Funding sources already in place include State Transportation Improvement Program (STIP)/Regional Transportation Improvement Program (RTIP), Transportation Improvement Program (TIP), CMA TIP and local CIPs.
- Scenario Two includes Tier 1 investments that have been approved by the CMA Board and included in the *Countywide Transportation Plan*. Tier 1 investments are based on what the CMA reasonably expects to receive from STP/CMAQ/STIP funding during the 25-year time frame of this Plan. This combination of funding totals about \$1.31 billion. (Note: A full list of Tier 1 projects is found in Chapter 6).

Tables 2.2 and 2.3 show the top congested freeway corridors during the a.m. and p.m. peak hours in 2025, respectively. This analysis considered a number of factors such as land use, population, housing and employment. Figure 2.2 shows the top congested locations during the a.m. and p.m. peak hours in 2025.

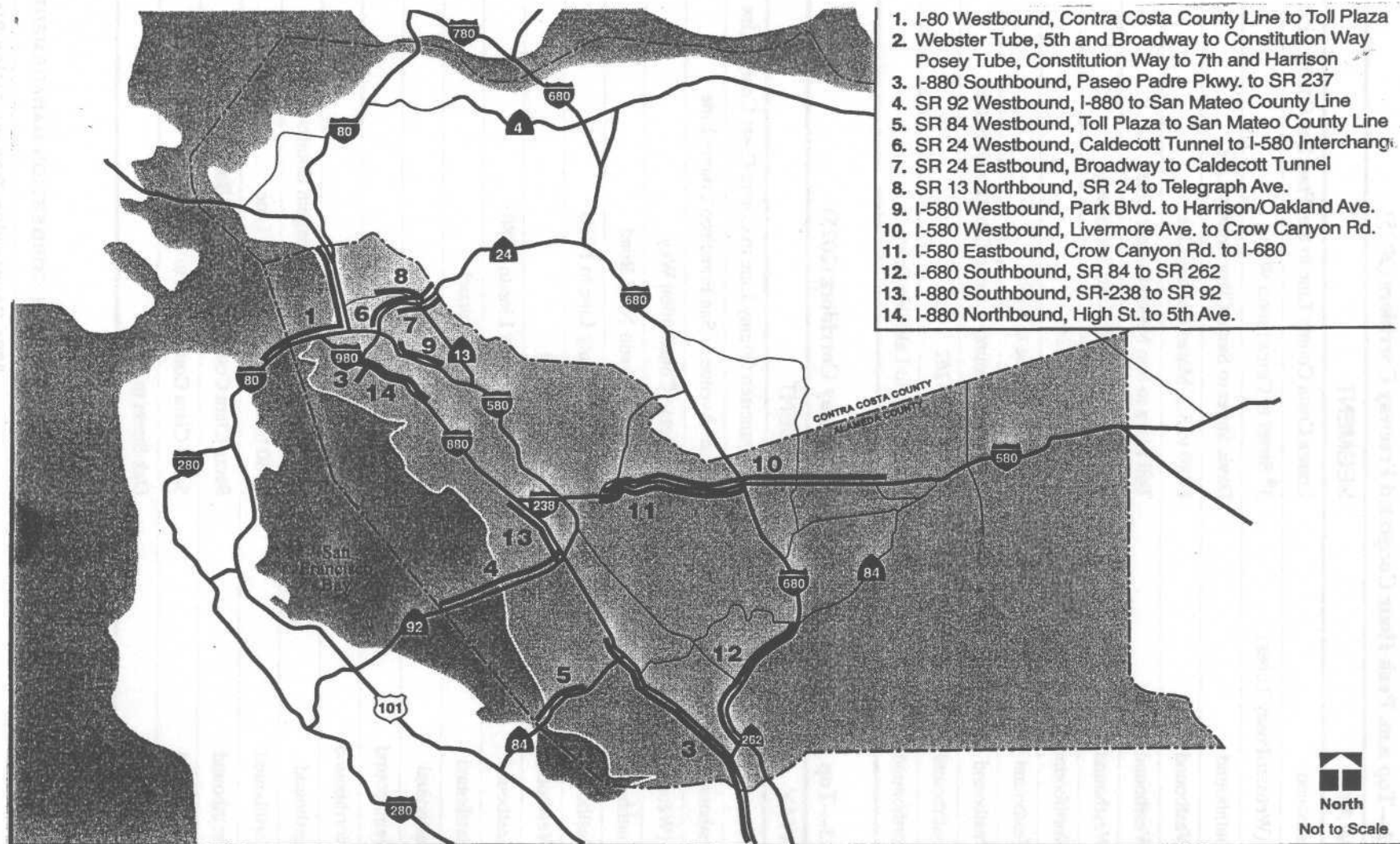
Table 2.2—Top a.m. Peak Hour Congested Freeway Corridors (2025)

ROADWAY	SEGMENT
I-80 Westbound	Contra Costa County Line to San Francisco County Line
SR-261 (Webster/Posey Tubes)	5 th Street to Constitution Way
I-880 Southbound	Davis Street to Santa Clara County Line
SR-92 Westbound	I-880 to San Mateo County Line
SR-84 Westbound	Toll Plaza to San Mateo County Line
SR-24 Westbound	Caldecott Tunnel to I-580 Interchange
SR-13 Northbound	Broadway to SR-24
I-580 Westbound	Fruitvale Avenue to I-80
I-580 Westbound	San Joaquin County Line to Crow Canyon Road
I-680 Southbound	SR-84 to SR-262
I-880 Northbound	66 th Avenue to Lakeside Drive

Table 2.3—Top p.m. Peak Hour Congested Freeway Corridors (2025)

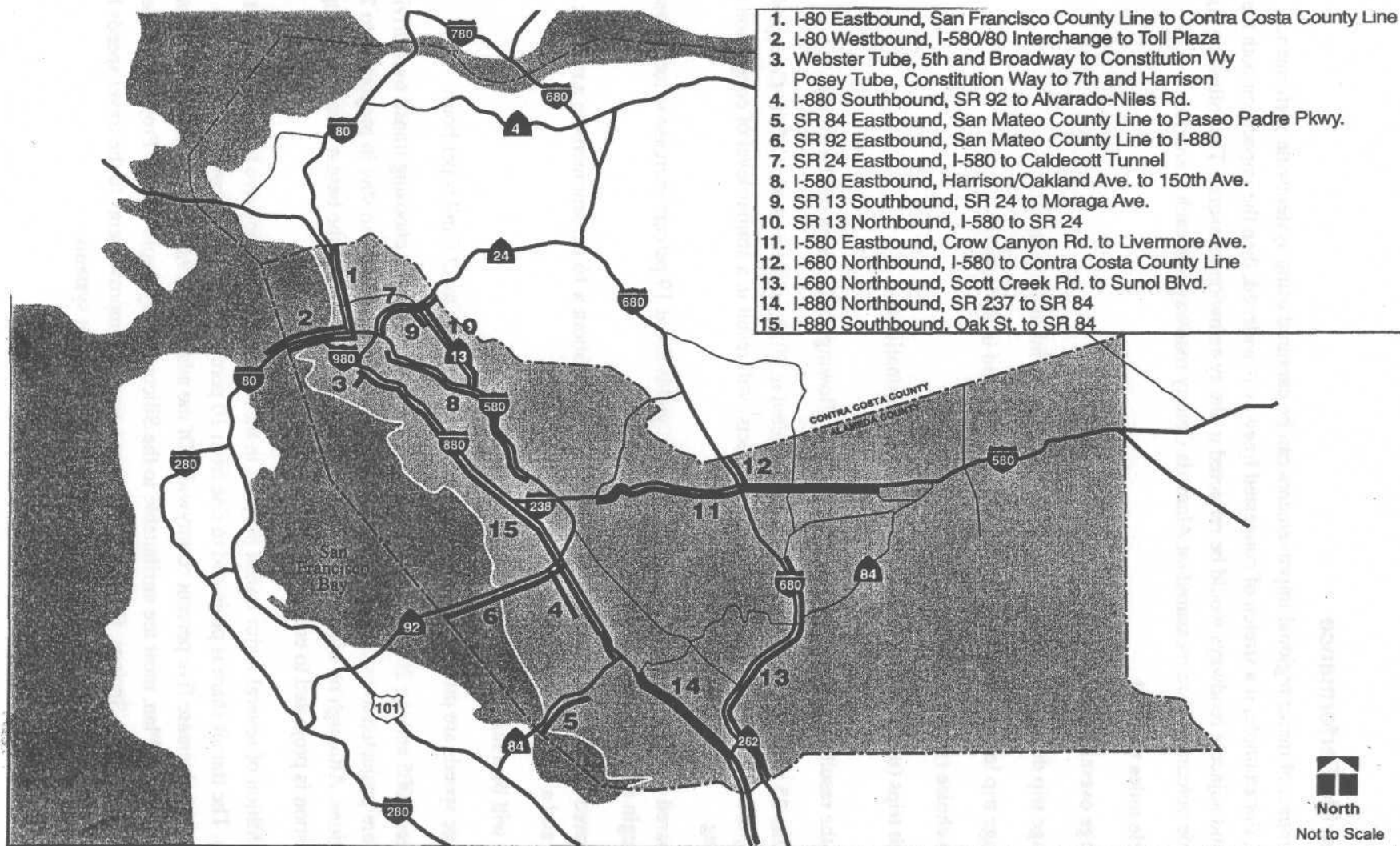
ROADWAY	SEGMENT
I-80 Eastbound	San Francisco County Line to Contra Costa County Line
I-80 Westbound	Gilman Avenue to San Francisco County Line
SR 261 (Webster/Posey Tubes)	5 th Street to Constitution Way
I-880 Southbound	SR-92 to Alvarado-Niles Road
SR 84 Eastbound	San Mateo County Line to I-880
SR 84 Westbound	Newark to I-880
SR 92 Eastbound	San Mateo County Line to I-880
SR 24 Eastbound	I-580 to Caldecott Tunnel
I-580 Eastbound	I-80 to I-238
SR 13 Southbound	SR-24 to Lincoln Avenue
SR 13 Northbound	Lincoln Avenue to SR 24
I-580 Eastbound	Crow Canyon Road to San Joaquin County Line
I-680 Northbound	I-580 to Contra Costa County Line
I-680 Northbound	Santa Clara County Line to Sunol Boulevard
I-880 Northbound	Santa Clara County Line to I-238
I-880 Southbound	Oak Street to I-238

Figure 2.2—Top 10 a.m. Peak Period Congested Locations in Alameda County (2025)



Source: Alameda Countywide Model, 2004

Figure 2.3—Top 10 p.m. Peak Period Congested Locations in Alameda County (2025)



Source: Alameda Countywide Model, 2004

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Systemwide Performance

The full impact of major regional improvements can be captured using systemwide performance measures. For example, if a stretch of congested freeway is widened, then the impacts on both the freeway and adjacent roadways would be reflected in the systemwide measures. The following six systemwide outcomes were measured on Alameda County roadways for each scenario:

- Vehicle miles traveled
- Average overall travel speed
- Average trip duration (whole trip for those that start or end in the county)
- Average trip length (whole trip for those that start or end in the county)
- Mode choice (trips that start or end in the county)
- Transit trips (made to and from Alameda County destinations)

Based on the results shown in tables 2.4 and 2.5, the following conclusions can be drawn:

- With the 25 percent increase in population projected in 2025, implementation of the *Countywide Transportation Plan* (including the Tier 1 projects) will result in a similar level of congestion as existing.
- Compared to 2005 conditions, the 2025 Baseline yields about 19 percent increase in total person trips that begin or end in Alameda County.
- Compared to 2005 conditions, the 2025 Baseline yields about a 16 percent increase a.m. peak hour VMT and a 19 percent increase in p.m. peak hour VMT.
- There will be a marked increase in traffic by 2025.
- Average speeds are projected to fall from 25.9 miles per hour to 22.6 miles per hour.
- Between 2005 and the 2025 Baseline, the percentage of commuters choosing transit over driving alone are projected to increase, while carpooling modes are projected to stay in proportion to 2005 conditions. Although no major transit improvements are assumed in the base network, growing congestion is projected to encourage drivers to use transit.
- The addition of several major transit projects in the Plan will have a positive benefit on transit mode shares. The transit share is projected to rise from 10 percent to 11 percent and transit trips are projected to increase five percent countywide. Of the additional 19,000 Alameda County transit trips projected in the Plan, most are attributable to the Silicon Valley Rapid Transit Project with the BART extension to Warm Springs. Other increases are a result of improvements to the travel speeds for AC Transit upon implementation of bus priority/rapid bus transit systems.

As these tables show, VMT, time spent in congestion, percentage of roadway system in congestion and duration of congestion are projected to increase while the length of the average peak hour are projected to decrease. Consistent with these findings, average speeds are also expected to decrease. Traffic congestion is projected to worsen at a faster rate than the increase in population and jobs in Alameda County. With projected increases in population and a mature transportation system, traffic congestion is inevitable in an urban area such as the Bay Area region. Transportation improvements—in addition to maintaining the system and providing some improvements—must focus on enhancing mobility.

Table 2.4—Changes in a.m. Peak Hour Transportation Conditions

PERFORMANCE MEASURE	2005	2025 ¹ SCENARIO ONE (Baseline)	2025 SCENARIO TWO (Baseline/Tier 1)
Population	1,534,400	1,914,200	1,914,200
Employment	790,400	1,014,190	1,014,190
a.m. Peak Hour Vehicle Data			
Vehicle Miles Traveled (millions)	2.1	2.7	2.7
Average Overall Travel Speed (mph)	21.9	19.4	19.5
Average Trip Duration (minutes)	24.4	27.3	27.0
Average Trip Length (miles)	8.9	8.9	8.8

1. Assumes *Projections 2002* for 2025 land use and a year 2010 transportation investment program.

Source: *ABAG Projections 2002* for Population and Employment. Alameda Countywide Travel Demand Model for all other performance measures on the MTS.

Table 2.5—Changes in p.m. Peak Hour Transportation Conditions

PERFORMANCE MEASURE	2005	2025 ¹		2025		
		SCENARIO ONE (Baseline)		SCENARIO TWO (Baseline/Tier 1)		
Population	1,521,972	1,650,146		1,650,146		
Employment	781,008	991,186		991,186		
p.m. Peak Hour Vehicle Data						
Vehicle Miles Traveled (millions)	2.2	3.0		3.0		
Average Overall Travel Speed (mph)	25.9	22.6		22.7		
Average Trip Duration (minutes)	22.8	25.7		25.5		
Average Trip Length (miles)	9.8	9.7		9.7		
Work Mode Shares (per day)	Trips²	%	Trips²	%	Trips²	%
Drive Alone	1043.0	85	1236.7	81	1225.2	80
Two-Person Auto	83.3	7	114.5	7	113.6	7
Three-Person Auto	17.9	1	22.9	1	22.816	2
Transit	79.4	6	156.4	10	168.3	11
Total	1223.6	100	1530.5	100	1529.9	100
Work vs. Non-Work (per day)						
Work Trips	1223.6	23	1530.5	24	1529.9	24
Non-Work Trips	4122.0	77	4854.2	76	4855.0	76
Total Trips	5345.6	100	6384.7	100	6385.0	100
Daily Transit Trips	223,800	356,400		375,200		

Notes:

1. Assumes *Projections 2002 2025* land use and a year 2010 transportation investment program.
2. Numbers reported in 1,000's.

Future Transit Conditions

System-level performance measures show that transit ridership for work trips in Alameda County will increase 96 percent under the Baseline Scenario of committed projects and an additional 16 percent under Tier 1 conditions. The number of persons choosing to drive alone, carpool or take transit will increase by 2025. The percentage of people driving alone will decrease by about four to five percent and the percentage of people taking transit will increase by the same amount. The modal shares for carpooling will also increase by four to six percent.

Rail

In 2004, BART extended service to the San Francisco International Airport, increasing its number of stations to 43 and its miles of double mainline track to 101. Currently, Capitol Corridor rail service between Oakland and Sacramento is 24 daily trips, four of which provide daily service to San Jose. Connections between BART and Amtrak/Capitol Corridor service exist at the Richmond Station, are under construction at the Oakland Coliseum (completion expected in late 2004) and are planned for the Union City BART station.

In Alameda County, BART's rail extension program includes plans for new stations in south Fremont (Warm Springs Extension) and West Dublin/Pleasanton. The Oakland Airport Connector project would provide an enhanced transit linkage between the BART system at the Coliseum Station and the Oakland International Airport. Systemwide ridership is forecast to increase 18.9 percent, from 93.7 million trips in fiscal year 2005 to 111.4 million trips in fiscal year 2014⁶. BART is also assessing system expansion opportunities in the Tri-Valley (East County) area and in Oakland's Jack London Square.

In addition to the System Expansion Program, BART has nearly completed the first round of the System Renovation program. The next round of the reinvestment program is being developed from BART's 30-year Reinvestment Study and related engineering work. The goal of ongoing reinvestment activities is to maintain BART's performance, safety and customer satisfaction measures. Since the original program started in 1995, BART's reinvestment programs include structural, mechanical, power and train car replacement or renovation elements.

Major elements include renovation of the A and B cars, modernizing automatic fare collection equipment, rail replacement, renovation and expansion of yards, and an escalator and elevator program. The program calls for an advanced system of automatic train control to increase the frequency of service. Projects are already underway to increase bicycle parking at many stations.

⁶ BART Fiscal Year 2005 Draft Short Range Transportation Plan/Capital Improvements Plan, February 2004.

AC Transit

Speed, frequency, and reliability are the key to future East Bay transit, for both rail and bus service. Responding to these needs, AC Transit plans faster, more reliable transit that promises to attract more passengers. The core proposal is a series of "Rapid" and Bus Rapid Transit (BRT) lines on AC Transit's 10 principal corridors in Alameda County, most of which run north-south. Rapids and BRT buses stop only at major stops and use transit signal priority (subject to agreements with the agencies operating the signals), while providing improved stop amenities and buses. The first Rapid line, 72R, began operating in June, 2003 on San Pablo Avenue from Downtown Oakland through Oakland, Emeryville, Berkeley, and Albany, continuing to Contra Costa College. As a result of the Rapid, ridership on the San Pablo corridor has increased while the system as a whole was losing patronage.

BRT incorporates all the features of Rapid service as well as lanes dedicated to bus travel to further improve travel speed and reliability. BRT also includes stations at each stop that are similar to light rail stations. Bus Rapid Transit has been selected as the preferred mode for the Telegraph-International corridor from Downtown Berkeley to Downtown Oakland to Bayfair BART in San Leandro. This corridor has the heaviest use in the East Bay, with over 30,000 weekday boardings. As of summer, 2004, AC Transit is currently preparing an Environmental Impact Report and associated preliminary engineering. Using Regional Measure 2 funds, AC Transit will operate a Rapid on the BRT route while the BRT is being developed.

AC Transit's Strategic Vision, initially adopted in 2002, calls for creation of Rapid service on other major corridors, including University Avenue in Berkeley, Macarthur Boulevard in Emeryville, Oakland, and San Leandro; and Hesperian Boulevard in Hayward and San Leandro. AC Transit is now seeking funds to plan Rapid service on Macarthur. The agency plans to implement other Rapids as capital and operating funds become available. On the Hollis/6th St corridor, AC Transit has established the first through service with line 19 from Berkeley to Emeryville, Downtown Oakland, Alameda and Fruitvale BART.

AC Transit restructured service in Southern Alameda County (Fremont, Newark, and Union City) in 2000. In Central Alameda County (Hayward, San Leandro, San Lorenzo, and adjacent unincorporated areas) elements of a restructuring plan were implemented in 2001, but other proposals were deferred due to lack of funds. In 2004, a timed transfer (where most buses arrive and leave at the same time) was added at Fremont BART. The service implemented in these areas reflected an extensive participation process with local jurisdictions and citizens. Fremont/ Newark routes were reorganized into a grid pattern, similar to the routes in Northern Alameda County. The South County structure is now being re-evaluated, and "flex service" where buses can deviate at least somewhat from standard fixed routes is being considered for low ridership routes. AC Transit has also implemented some proposals of the City of Alameda's *Alameda Transit Plan*. For example, service between Alameda and Fruitvale BART has been increased.

Cuts in revenue between 2001 and 2004 forced cuts, including shortening routes, reducing frequencies, and eliminating routes, on lines with low ridership, particularly in the Berkeley, Oakland and Piedmont hills. Service on most trunk routes (lines 40/43, 51, 57, 72/73, and 82) was maintained. Trunk line 58 was eliminated as a second route along Macarthur and replaced with limited stop Transbay line NL, which is the basis for a future Macarthur Rapid.

Regional Measure 2, the \$1 bridge toll increase, provides funds for a number of services affecting the Transbay corridors. RM 2 will allow restoration of some previous cuts in Transbay service, particularly from Albany, Berkeley and Oakland. It will also fund augmented late night service from San Francisco to BART stations in the East Bay during the hours BART is closed.

LAVTA

LAVTA's current fixed-route fleet comprises 75 vehicles with a fiscal year 2005 operating budget of \$10.4 million. Ridership for the WHEELS fixed route system in FY 04 is estimated at 1.9 million unlinked trips. Ridership for the fixed route system has decreased considerably from previous years due to the recent economic slowdown. Reasons for this decline have been identified as lower employment ridership in the Tri-Valley, as well as service reductions made by LAVTA. It should be noted though that LAVTA has seen an increase in ridership and passenger productivity measures over the past year and is confident that this trend will continue. Conversely, the Dial A Ride fleet is comprised of 18 vehicles and ridership for FY 2004 is estimated to be 48,000 unlinked trips. Ridership for the Dial A Ride system has been on a consistent upward trend since the inception of the program and is estimated to continue to increase as the Tri-Valley continues to grow in size.

In April 2004, LAVTA unveiled the arrival of real time transit for the Tri-Valley. LAVTA's AVL system provides the ultimate in safety, passenger information and vehicle locations. WHEELS patrons will be able to access this information in a variety of means, from real time arrival signs to touch screen kiosks, and a web-based vehicle arrivals and departures application. Patrons can log onto the site at www.wheelsbus.com and utilize either the schedule arrival times, or actually view a map with vehicle locations as well as arrival and departure times for each time point, system wide. LAVTA is pleased and proud to be able to offer this outstanding amenity to WHEELS patrons as the first system in the bay area to offer a *system wide* real-time transit connection. Next steps for the LAVTA ITS program include developing transit signal priority corridors which could lead to the eventual introduction of a BRT corridor for the Tri-Valley.

LAVTA plans to initiate construction of phase 1 of a new satellite operations facility in 2005. This facility will provide much needed vehicle storage and maintenance space. Currently, LAVTA is forced to store in

excess of 30 vehicles off site. LAVTA is also a partner and recipient of TCRP funds which will work to continue to improve express bus service, expand evening and weekend service, and offer more employer shuttles.

The WHEELS Prime Time system has also been adversely affected by the recent economic slowdown. The Prime Time service operates employee driven shuttles from the Tri-Valley down to Silicon Valley daily to provide a door to door commute option to residents of the Tri-Valley. Currently, the service is operated using two routes to two different large employers, Intel and Lockheed Martin. Unfortunately, ridership for one of the two routes (Intel) has declined to such a point that service discontinuation is being proposed for Fall 2004. LAVTA also attempted to instigate an additional Prime Time route to Sun Microsystems in Newark. Sufficient ridership for this service never materialized as anticipated, in spite of intense marketing efforts, so the route was terminated shortly after its inception.

LAVTA continues to enjoy a very productive relationship with both rail providers coming into the Tri-Valley. The ACE train operates service between Stockton and San José, serving three stops in the LAVTA coverage area. When this service began, LAVTA implemented two shuttle routes connecting all ACE trains. The Pleasanton shuttle connects with the BART station and major employers such as the Hacienda business park, while the Livermore shuttle served the Lawrence Livermore and Sandia laboratories. Unfortunately, due to low demand and the high relative cost, the Livermore ACE shuttle was discontinued in April 2002.

Water Transit

The San Francisco Bay Area Water Transit Authority (WTA) is a regional agency authorized by the State of California to operate a comprehensive San Francisco Bay Area public water transit system. In 2003, the WTA's plan, "A Strategy to Improve Public Transit with an Environmentally Friendly Ferry System" was approved by statute (Senate Bill 915, Ch. 714, stats of 2003).

This Plan resulted from extensive technical studies that examined ridership demand, cost-effectiveness, vessel design, environmental impacts, safety, and operations. The California Legislature required these studies along with extensive public participation when it created the WTA in 1999 (California Government Code Section 66540-66540.72).

Regional Measure 2, passed by the voters in March 2004, will provide funding for Alameda County for new Berkeley ferry service and Alameda to South San Francisco service, and will enhance existing Alameda/Oakland service by paying for two new boats. The WTA is working with the Jack London Square developers and community on alternative terminal sites with a goal of ensuring the best landside connections. The WTA seeks to fund the remaining five new ferry routes that it has proposed around the Bay Area from federal and local sources.

Future Freight Movement

Truck traffic generated by the Port of Oakland represents approximately two percent of all truck travel in the region, but a greater percentage of truck traffic on freeways in the vicinity of the Port. The volume of containers handled by the Port of Oakland is expected to double over the next 20 years. This growth level will mean more Port-generated traffic using I-80, I-880, I-580 I-238. Two options to help alleviate congestion from truck traffic during the peak period are considering changing hours of Port operation from daytime to 24 hours a day and providing truck terminals in the corridor serving the Port.

The Port, as the owner and operator of Oakland International Airport, and BART are moving forward with the design and construction of an elevated people mover that will connect the Airport to the BART system. This project will take upwards of three million annual vehicle trips off of Alameda County roads and highways.

Several critical truck routes will be affected by the increase in midday traffic congestion. Excess demand will extend the normal peak period affecting midday freight movements on: the Altamont Pass; I-580, I-238, from I-580 to I-880; and I-880, between I-238 and the Port of Oakland and I-80.

CONCLUSIONS

In 2002, nearly 15 percent of the CMP freeway network and the MTS roadway system was congested (at F) during p.m. peak periods. Forecasts of conditions in 2025 show that 25 percent of the roadway system will be congested unless additional investments are made. Given the maturity of the transportation system, the 2025 Committed Projects and Tier 1 Investment Program focus on maintaining and managing the transportation system with limited strategic expansion.

The county's location in the region plays a role in contributing to increasing levels of congestion. Alameda County's major facilities—such as I-680, I-880, I-580 and I-80—function as regional routes for people traveling through Alameda County to jobs or housing in Santa Clara, San Francisco, Contra Costa and San Joaquin counties.

Because of limited funding, it will be more difficult to make transportation investments when they are needed—for example, funding may come after a problem has grown more expensive to address. Roadway maintenance needs will require a significant investment, particularly in the older communities in North County.

Concerns over air quality and traffic congestion suggest the need for increased transit service; however, current funding for transit operations and capital investment is inadequate, so increases in service will likely have to wait for new sources of funding.

During the 25-year timeframe

Alameda County's role as a gateway to international trade will be jeopardized unless congestion on the highway system can be confined to peak periods. Efforts to improve critical freight routes through targeted investment can maintain or improve the economic vitality of Alameda County by preserving freight movements during most hours of the day.

of the Plan, a funding shortfall of \$914 million is

Without additional funding and improved system management, the countywide system cannot meet the goals and requirements outlined in Chapter 1, Table 1.1. But before the CMA can seek additional taxes or fees, it must demonstrate that every effort has been made to stretch existing revenues and make the most productive use of existing facilities.

anticipated for roadway maintenance unless new revenue sources are approved.